PS-LX1

US Model
AEP Model
E Model

STEREO TURNTABLE SYSTEM

SPECIFICATIONS

GENERAL

Power Requirements:	120 V ac, 60 Hz (US model) 220 V ac, 50/60 Hz (AEP model) 110–120 or 220–240 V ac adjustable, 50/60 Hz (E model)
Power Consumption:	5 W
Dimensions:	Approx. 430 (w) x 105 (h) x 345 (d) mm (17 (w) x 4¼ (h) x 13⅝ (d) in.) including projecting parts and controls
Weight:	Approx. 4.3 kg (9 lbs 8 oz) net Approx. 5.6 kg (12 lbs 6 oz), in shipping carton

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TURNTABLE

Platter:	30.4 cm (12 in.), aluminum-alloy diecast
Motor:	Linear torque BSL (brushless and slotless) motor
Drive System:	Direct drive
Control System:	Magnedisc servo control system
Speed:	33⅓ rpm, 45 rpm
Wow and Flutter:	0.03 % (WRMS)*, 0.04 % (WRMS) ±0.055 % (DIN)
Signal-to-noise Ratio:	72 dB (DIN-B)
Automatic System:	Return, reject

— Continued on next page —

MICROFILM

SONY
SERVICE MANUAL

TONEARM

Type:	Statically balanced
Pivot-to-stylus Length:	216.5 mm (8½ in.)
Overall Arm Length:	275 mm (10⅞ in.)
Overhang:	16.5 mm (21/32 in.)
Tracking Error:	+3°, −1°

CARTRIDGE VL-38GSA

Type:	Moving magnet type
Frequency Response:	20 to 20,000 Hz
Channel Separation:	20 dB at 1 kHz
Output Voltage:	2.5 mV at 1 kHz, 5 cm/sec., 45°
Load Impedance:	50 to 100 kΩ
Tracking Force:	2.5 g
Stylus:	Sony ND-138G, Audio Technica ATN-3400 (0.6 mil diamond)
Weight:	8 g

Note
Appliance conforms with EEC Directive 76/889 regarding interference suppression.

* This new measuring method concerns only the turntable assembly, including the platter. It excludes wow and flutter caused by the tonearm, the cartridge, or the record. Measured by obtaining signal from magnetic pickup head.

MODEL IDENTIFICATION
— Specifcations Labels —

US model

SONY® MODEL NO. PS–LX1
STEREO TURNTABLE SYSTEM
AC: 120V 60Hz 5W
MADE IN JAPAN

E model

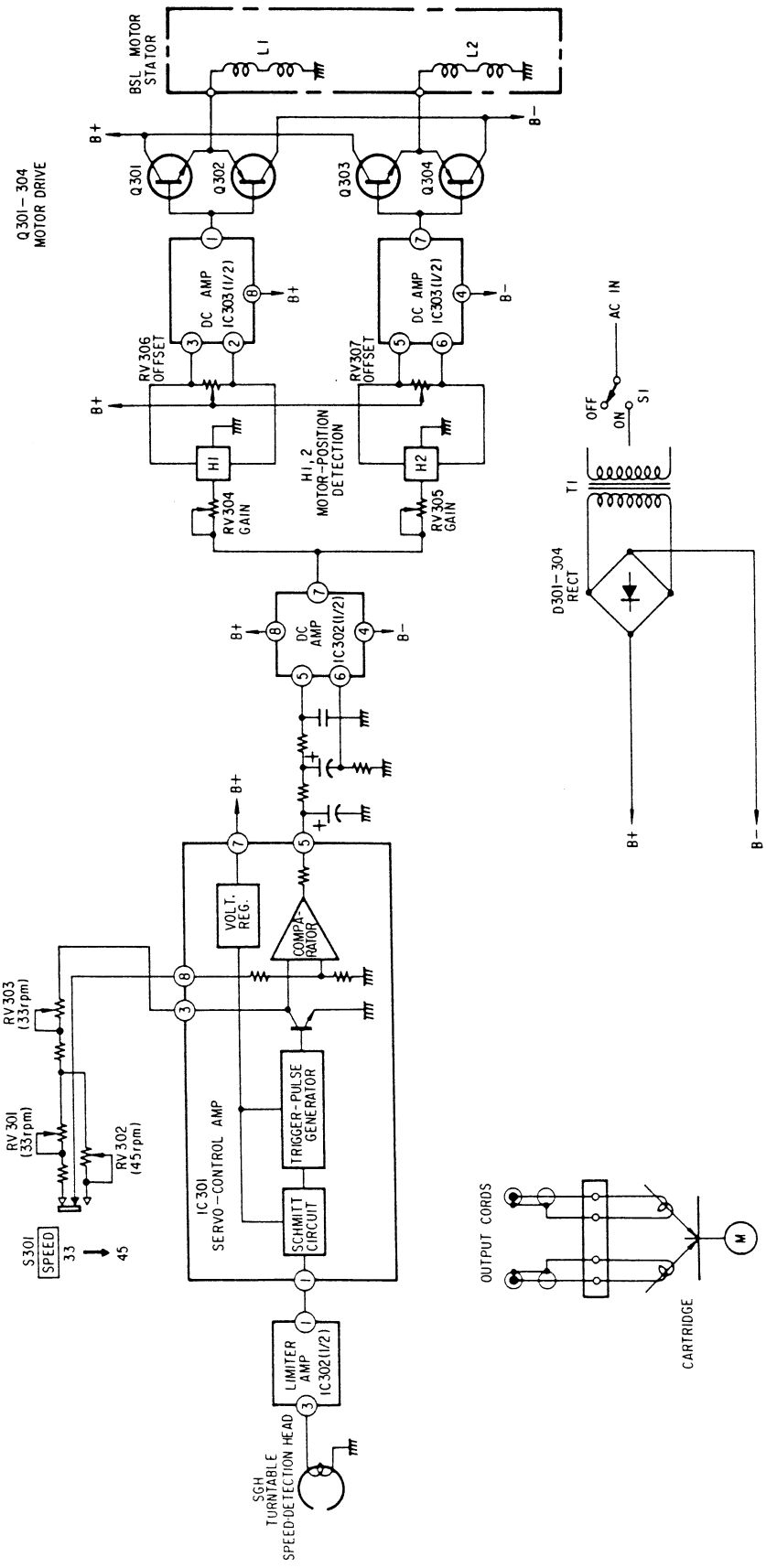
SONY® MODEL NO. PS–LX1
STEREO TURNTABLE SYSTEM
AC: 110 – 120V, 220 – 240V ~ 50/60Hz 5W
MADE IN JAPAN

AEP model

SONY® MODEL NO. PS–LX1
STEREO TURNTABLE SYSTEM
AC: 220V ~ 50/60Hz 5W
MADE IN JAPAN

SECTION 1
OUTLINE

BLOCK DIAGRAM



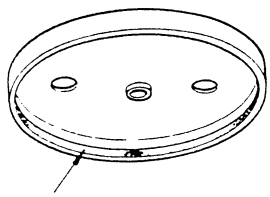
SECTION 2
DISASSEMBLY

Note:
- Follow the disassembly procedure in the numerical order given.
- Be sure to note the parts placements/positionings of each other before disassembling them apart.
- Be sure to note the burred side of the washers and retaining rings with bur.

NOTES ON REPAIRING

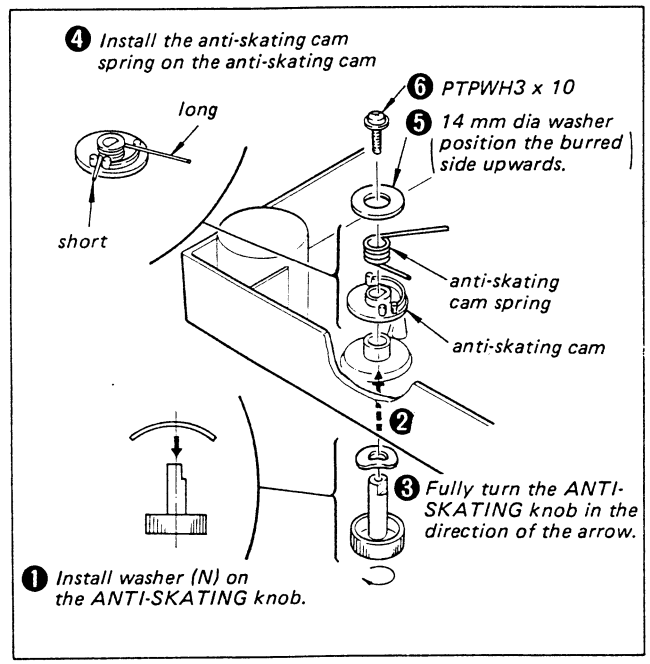
TURNTABLE HANDLING

Bottom view of turntable



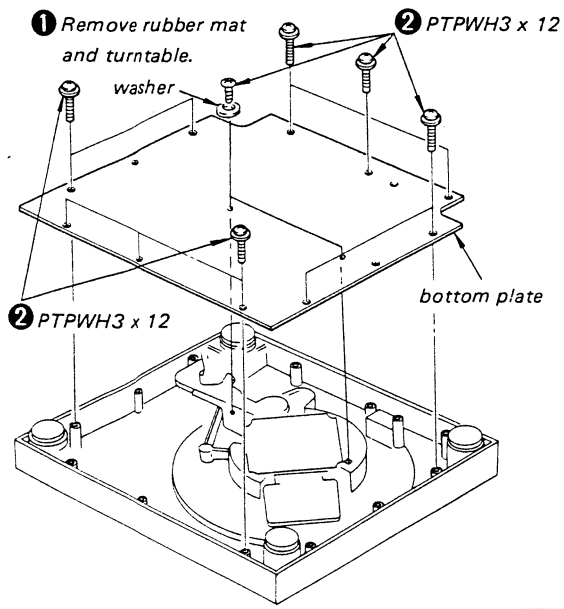
Be sure not to spoil the magnetic coating (dark brown color).

ANTI-SKATING KNOB INSTALLATION

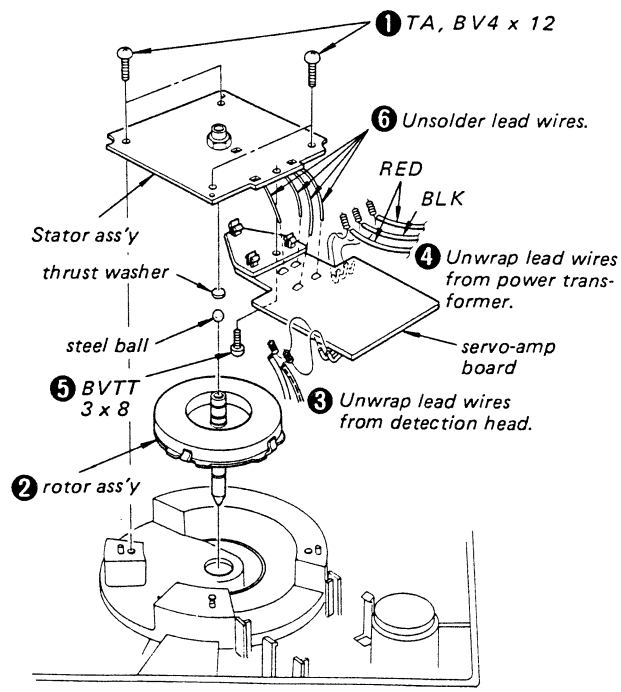

4 Install the anti-skating cam spring on the anti-skating cam
6 PTPWH3 x 10
long
5 14 mm dia washer position the burred side upwards.
short
anti-skating cam spring
anti-skating cam
2
3 Fully turn the ANTI-SKATING knob in the direction of the arrow.
1 Install washer (N) on the ANTI-SKATING knob.

REMOVAL

BOTTOM PLATE

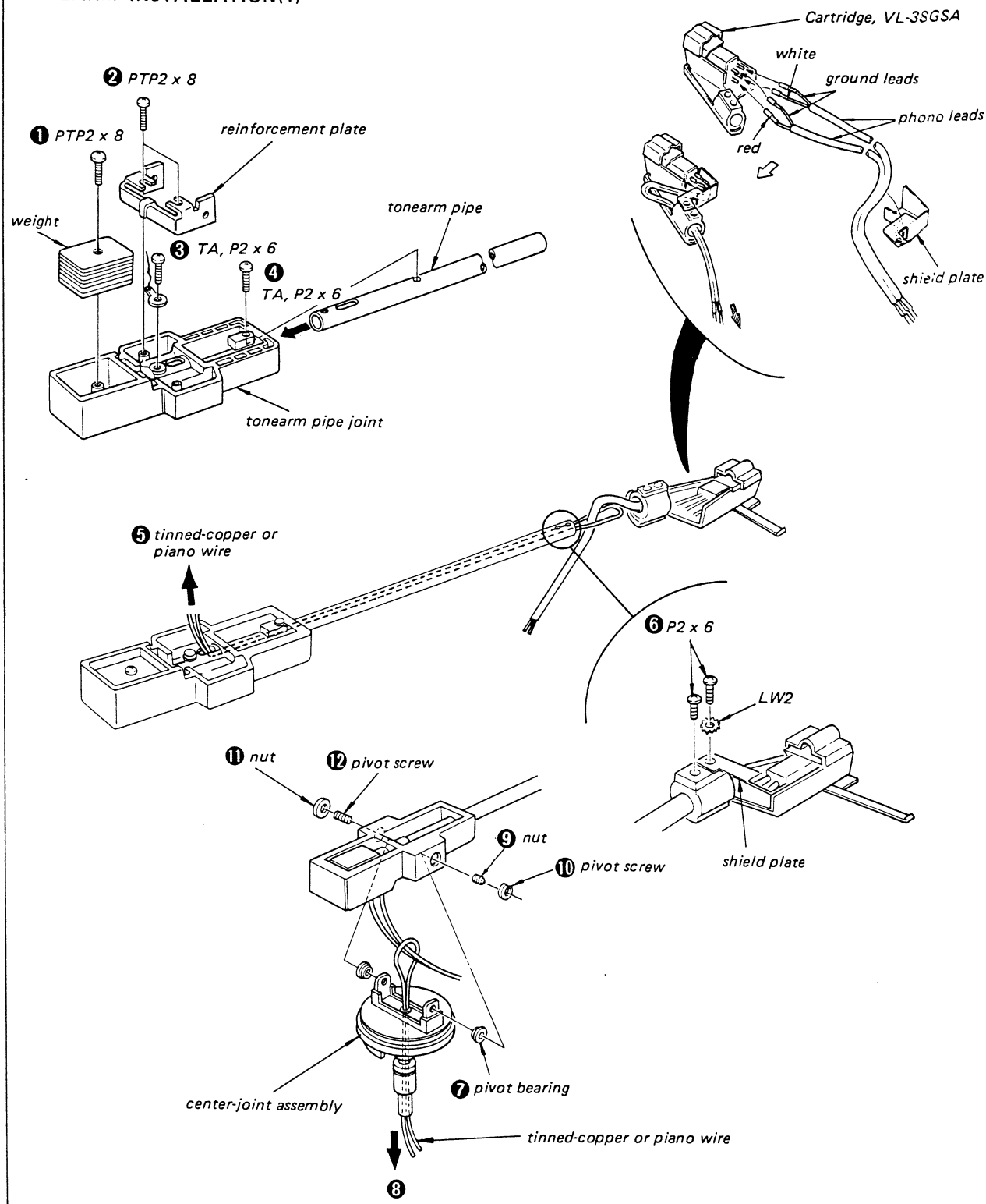


SERVO AMP, STATOR ASS'Y and ROTOR ASS'Y

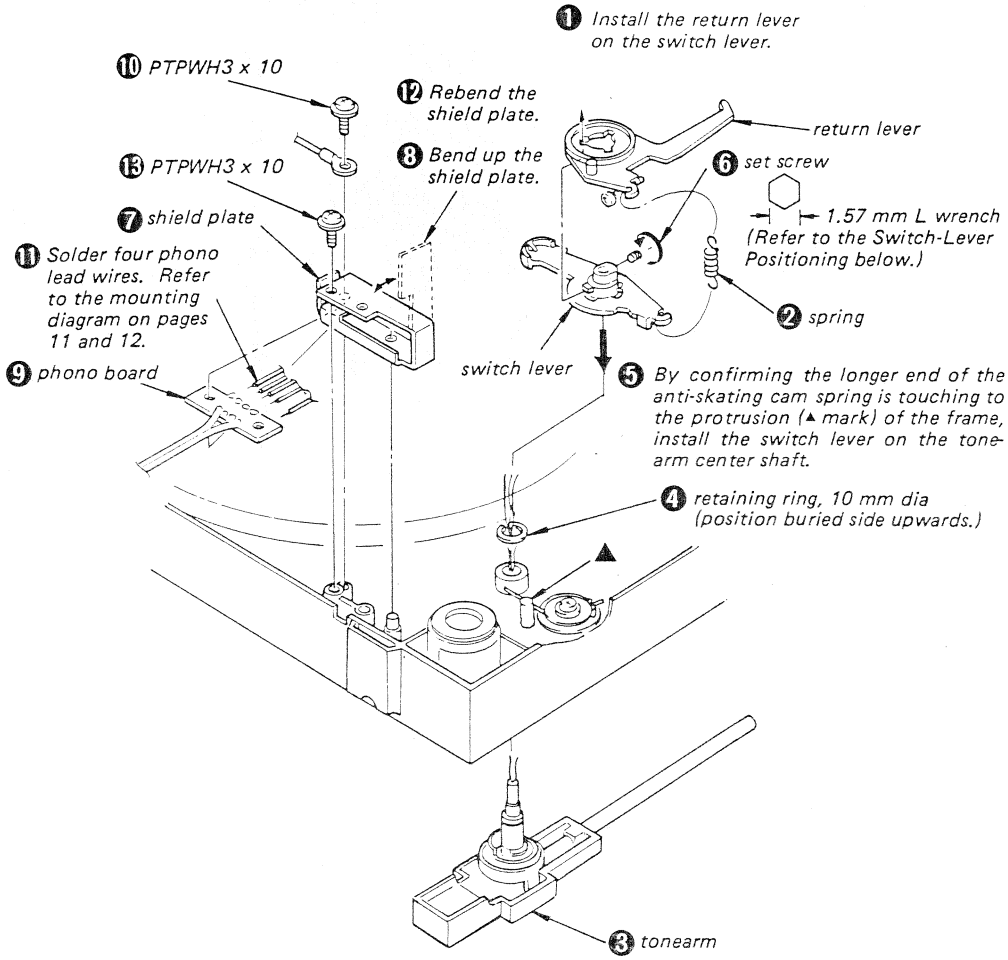


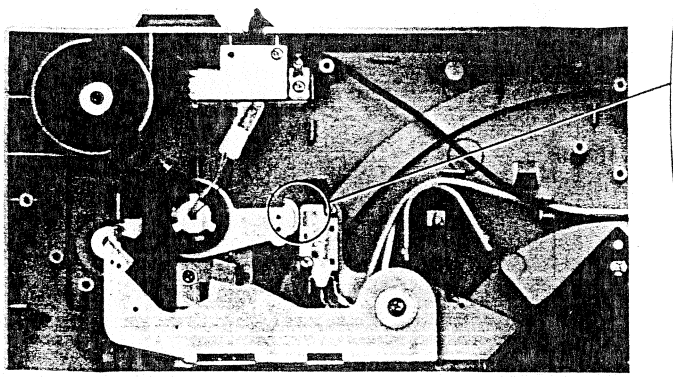
Note: Refer to mounting diagram when resoldering the stator-coil lead wires.

TONEARM INSTALLATION(1)



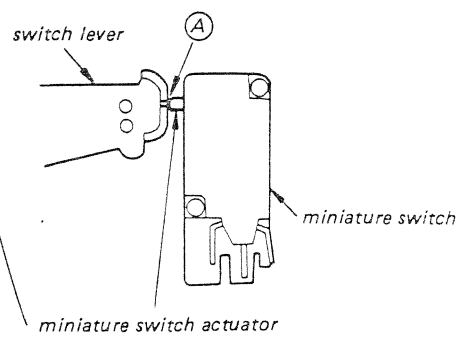
TONEARM INSTALLATION (2)


❶ Install the return lever on the switch lever.
❿ PTPWH3 x 10
⓬ Rebend the shield plate.
return lever
⓭ PTPWH3 x 10
❽ Bend up the shield plate.
❻ set screw
❼ shield plate
1.57 mm L wrench (Refer to the Switch-Lever Positioning below.)
⓫ Solder four phono lead wires. Refer to the mounting diagram on pages 11 and 12.
❷ spring
switch lever
❺ By confirming the longer end of the anti-skating cam spring is touching to the protrusion (▲ mark) of the frame, install the switch lever on the tone-arm center shaft.
❾ phono board
❹ retaining ring, 10 mm dia (position buried side upwards.)
❸ tonearm



Switch-Lever Positioning:

1. Place the tonearm on the tonearm rest.
2. Position the drive gear to the rest mode.
3. Position the part Ⓐ of the switch lever in line with the switch actuator and tighten the setscrew securely.

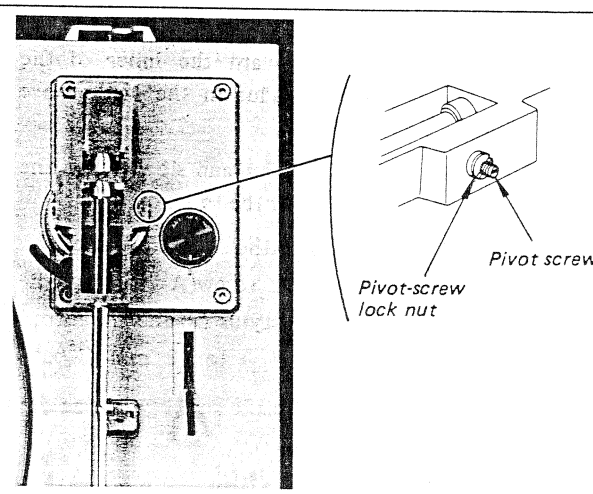


SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

Longitudinal Sensitivity Adjustment

1. Make the longitudinal balance adjustment of tonearm.
2. Repeating the following procedures, adjust the pivot screws and the lock nuts.
   a. When the 60 mg weight is placed on the top of the shell, the tonearm sinks more than 5 mm measured at stylus-tip.
   b. When the weight is removed, the tonearm returns horizontally.

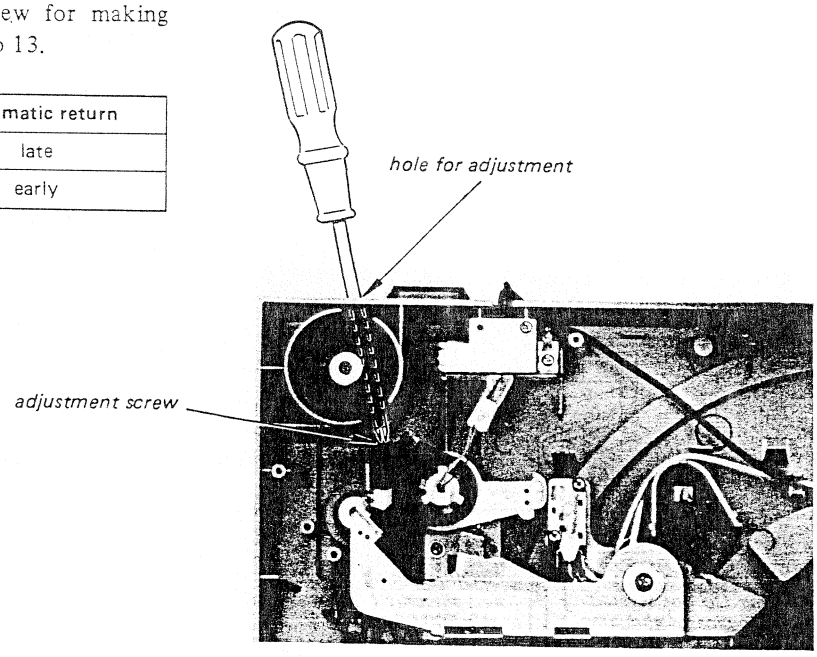


Automatic Return Position Adjustment

1. Reject the tonearm by REJECT button.
2. Bring the tonearm to the automatic-return test groove (inside portion) of the test record (YFSC-16), and adjust the screw for making the tonearm return at count 3 to 13.

Turning direction	Automatic return
clockwise	late
counterclockwise	early

Note: The normal auto-return position is between 59 mm (2-3/8") and 64 mm (2-1/2") from the center of the center shaft.



Tonearm Height Adjustment

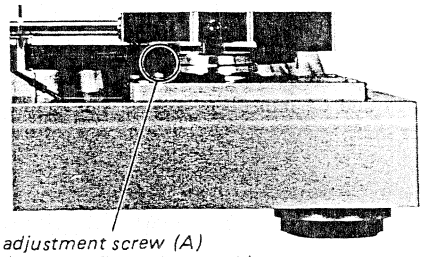
Note: Perform both adjustments A) and B).

A)

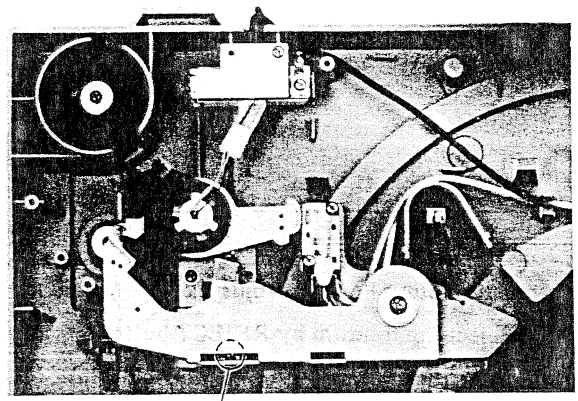
1. Bring the tonearm toward the inner of the record and put the stylus in the last groove of the record.
2. Push the REJECT button and slowly turn the turntable by hand to lift the tonearm.
3. Adjust the height of the tonearm lifter by turning the adjustment screw(A) so that the clearance between the stylus tip and the record is approx. 4 mm ($^3/_{16}$") to 12 mm ($^{15}/_{32}$").
4. After the adjustment, make sure by turning the turntable by hand that the tonearm smoothly returns to the tonearm rest.

B)

1. Make a lifter up mode by pushing the lifter button.
2. Slowly turn the turntable by hand clockwise and, at the same time, bring the tonearm to the outer-most record groove. With this condition, adjust the adjustment screw (B) so that the clearance between the stylus tip and the record surface becomes in 4 mm ($^3/_{16}$") to 12 mm ($^{15}/_{32}$").
3. By further turning the turntable by hand, move the tonearm to the inner-most groove. In this condition, the clearance between the stylus tip and the record surface should also be 4 mm ($^3/_{16}$") to 12 mm ($^{15}/_{32}$").
4. The clearance difference between A) and B)-3 should be less than 4 mm ($^3/_{16}$").
5. After the adjustment, lock the adjustment screw (B) with locking compound.



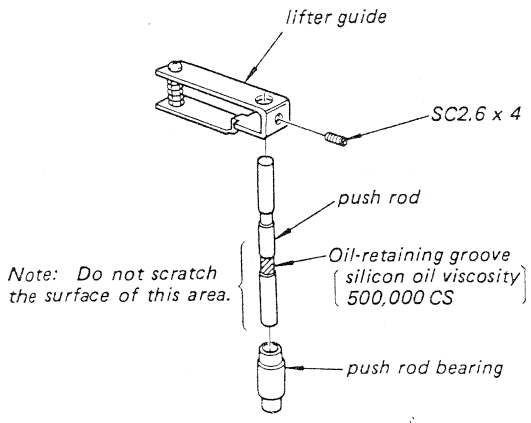
adjustment screw (A)
(Use a 1.27 mm L wrench)



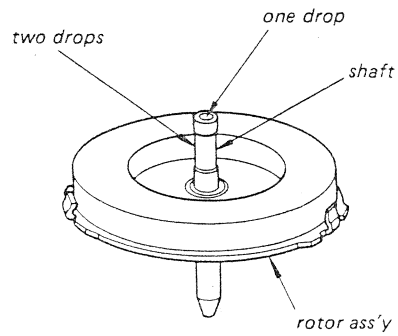
adjustment screw (B)

Lubrication

1. When the motor rotor ass'y is replaced, apply Sony oil OL-2KA to the rotor shaft as illustrated below.



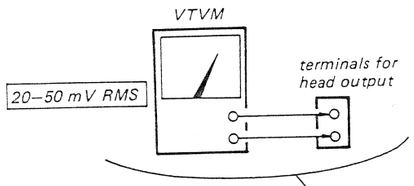
2. When the push rod or damper rod is replaced, apply proper silicon oil to the oil-retaining groove of the shaft as illustrated below.



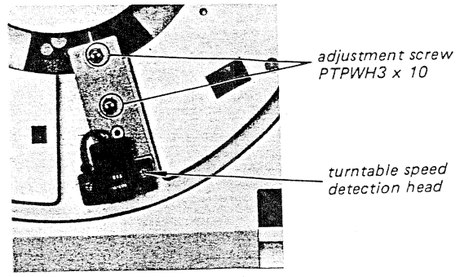
3-2. ELECTRICAL ADJUSTMENTS

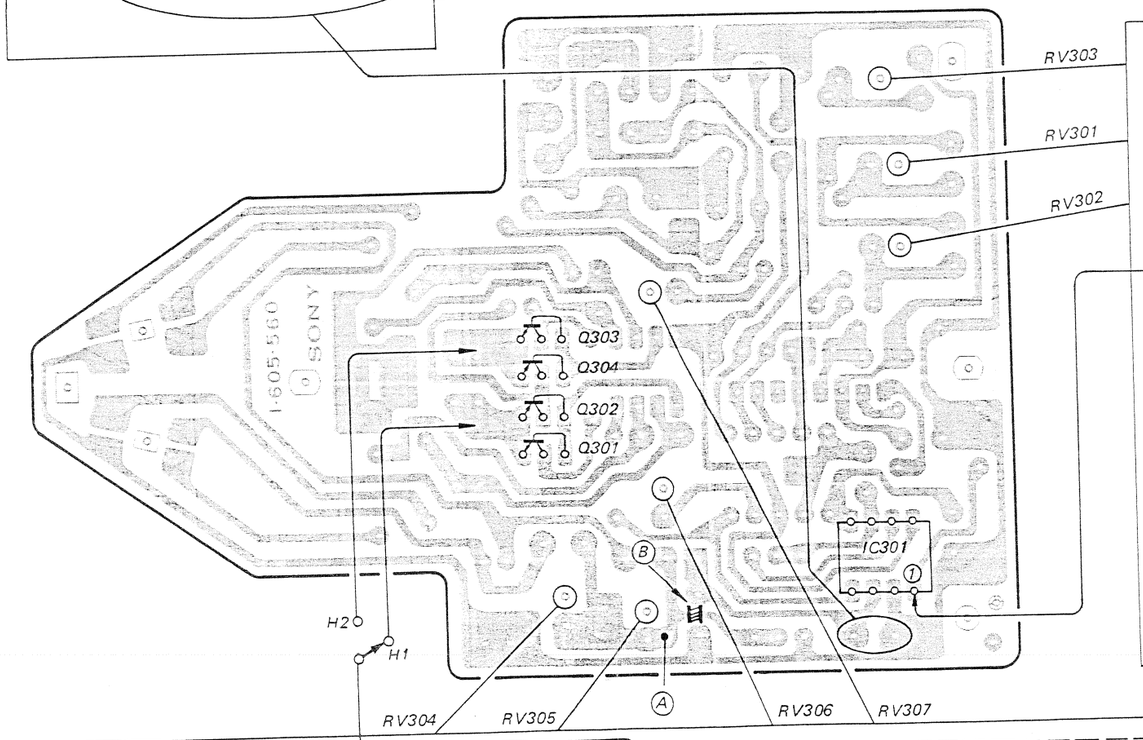
Speed-detection Head's Position Adjustment

1. Turn the POWER on.
2. Turn the SPEED switch to 33.
3. Put a test record on the mat.
4. Set the unit to the ON position. Read the VTVM reading.



5. With the turntable turning, stopping, and removing it at a time, adjust the position of the speed-detection head's position inside and out by loosening the adjustment screw so that the output-signal level becomes in 20 mV RMS to 50 mV RMS. Note that the output-signal level critically varies in accordance with a little displacement of the head.
6. Check that the head is not touching with the coating of the inside turntable. The clearance between the head and coating should not be less than 0.3 mm or the thickness of an ordinal name-card.

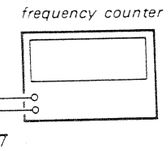




Speed Adjustment

Note: Use a small-blade screwdriver for the adjustments.

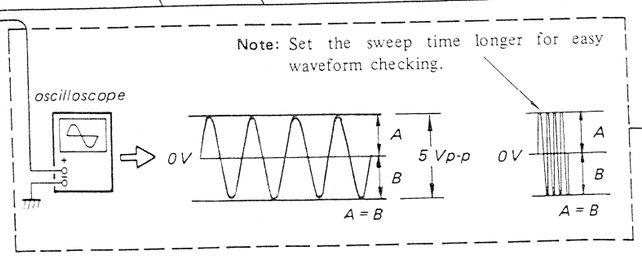
1. Turn POWER on.
2. Connect a frequency counter to pin ① of IC301.

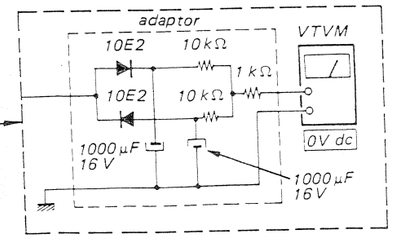


3. Turn the SPEED switch to 33.
4. Adjust the coarse adjustment RV303, which acts both for 33 and 45 rpm, for 284.0 Hz reading on the frequency counter.
5. Turn the SPEED switch to 45.
6. Adjust the fine adjustment RV302 for 384.0 Hz reading.
7. Turn the SPEED switch to 33.
8. Adjust the fine adjustment RV301 for 284.4 Hz reading.

Gain/Offset Adjustments

1. Cut the pattern foil at the point Ⓑ, and apply a 2V dc to the point Ⓐ.
2. Put an appropriate record on the mat.
3. Turn the POWER switch on.
4. Adjust the gain adjustment RV304 at the switch position H1 for a 5 Vp-p reading on the oscilloscope.
5. Adjust the gain adjustment RV305 at H2 for a 5 V p-p reading on the oscilloscope.
6. Adjust the offset adjustment RV306 at H1 for a 0V dc centering on the waveform.
7. Adjust the offset adjustment RV307 at H2 for a 0V dc centering on the waveform.
8. After the adjustments, bridge the opened patterns at the point Ⓑ and remove the dc-voltage connection from the point Ⓐ.





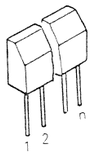
SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM
– Conductor Side –

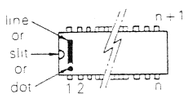
Semiconductor Leads Layout

2SB734
2SD774

CX065B

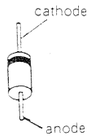


μPC4558C

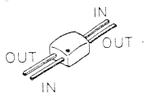


(Top view)

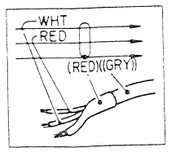
10E2



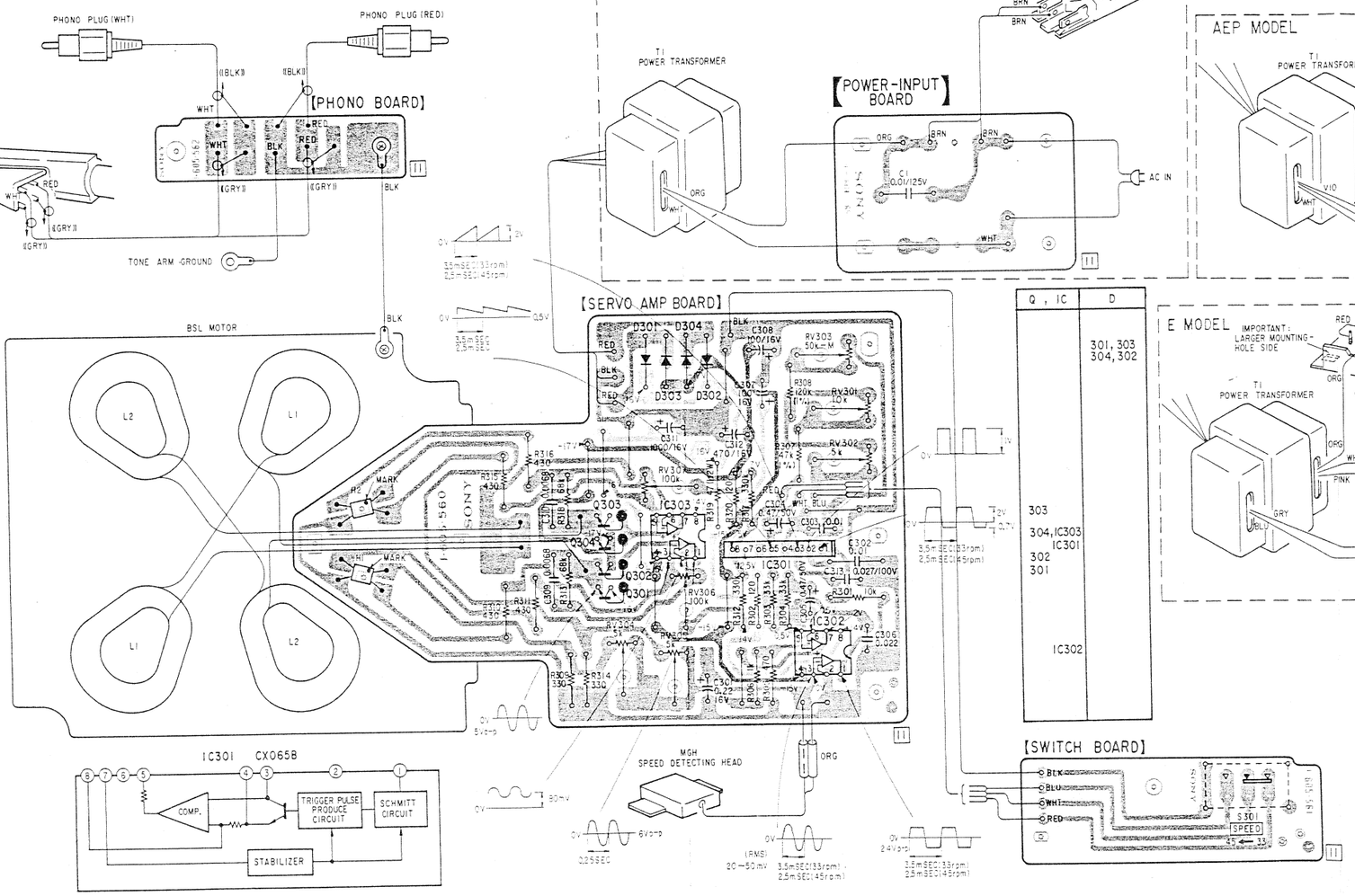
HL300C



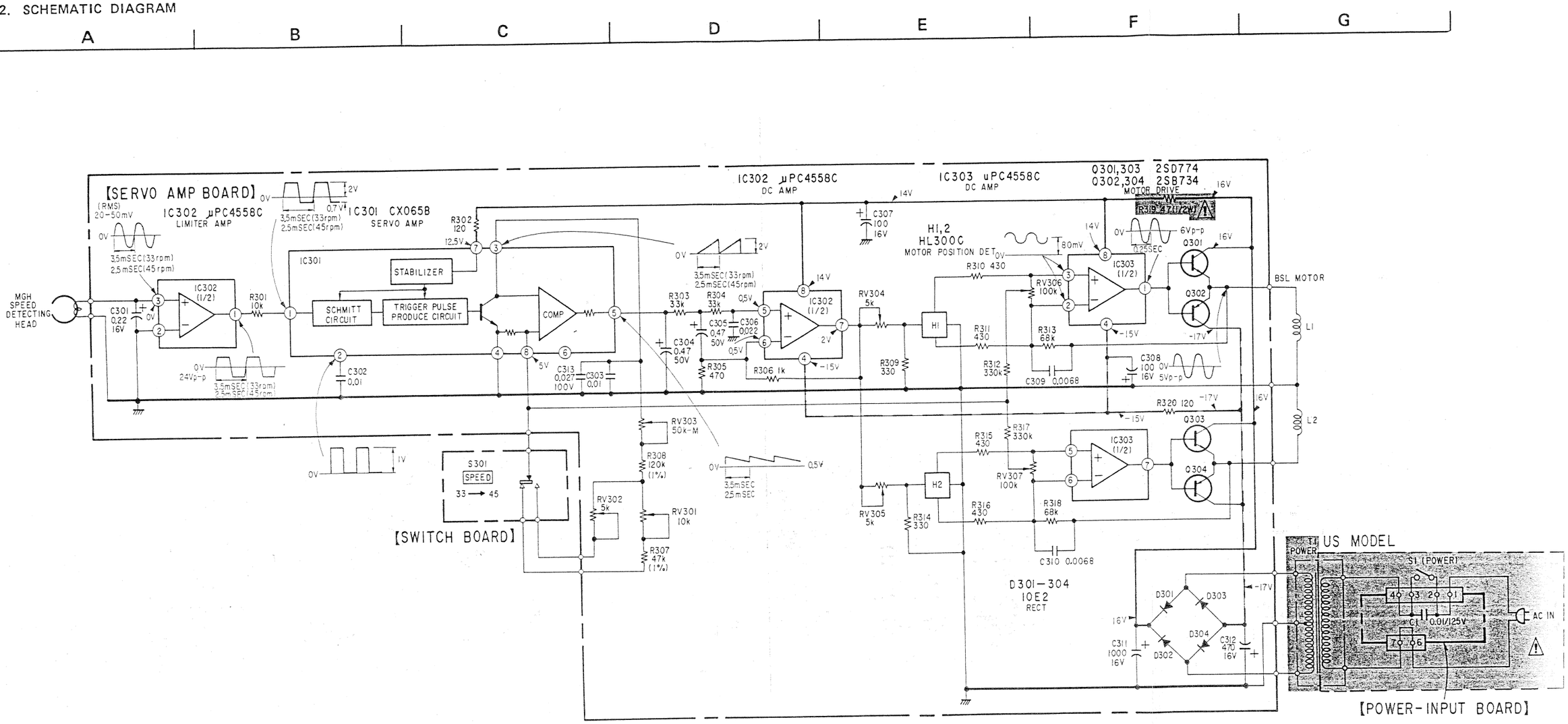
- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- —|▯|— and —|(— : electrolytics
- : B + pattern
- : B - pattern



4-2. SCHEMATIC DIAGRAM



Note:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- ▭ : adjustment for repair.
- ——: B+ bus.
- – – –: B– bus.
- Readings are taken under no-signal conditions with a VOM (20 kΩ/V).
- Switch

Ref. No.	Switch	Position
S1	POWER	OFF
S301	SPEED	33

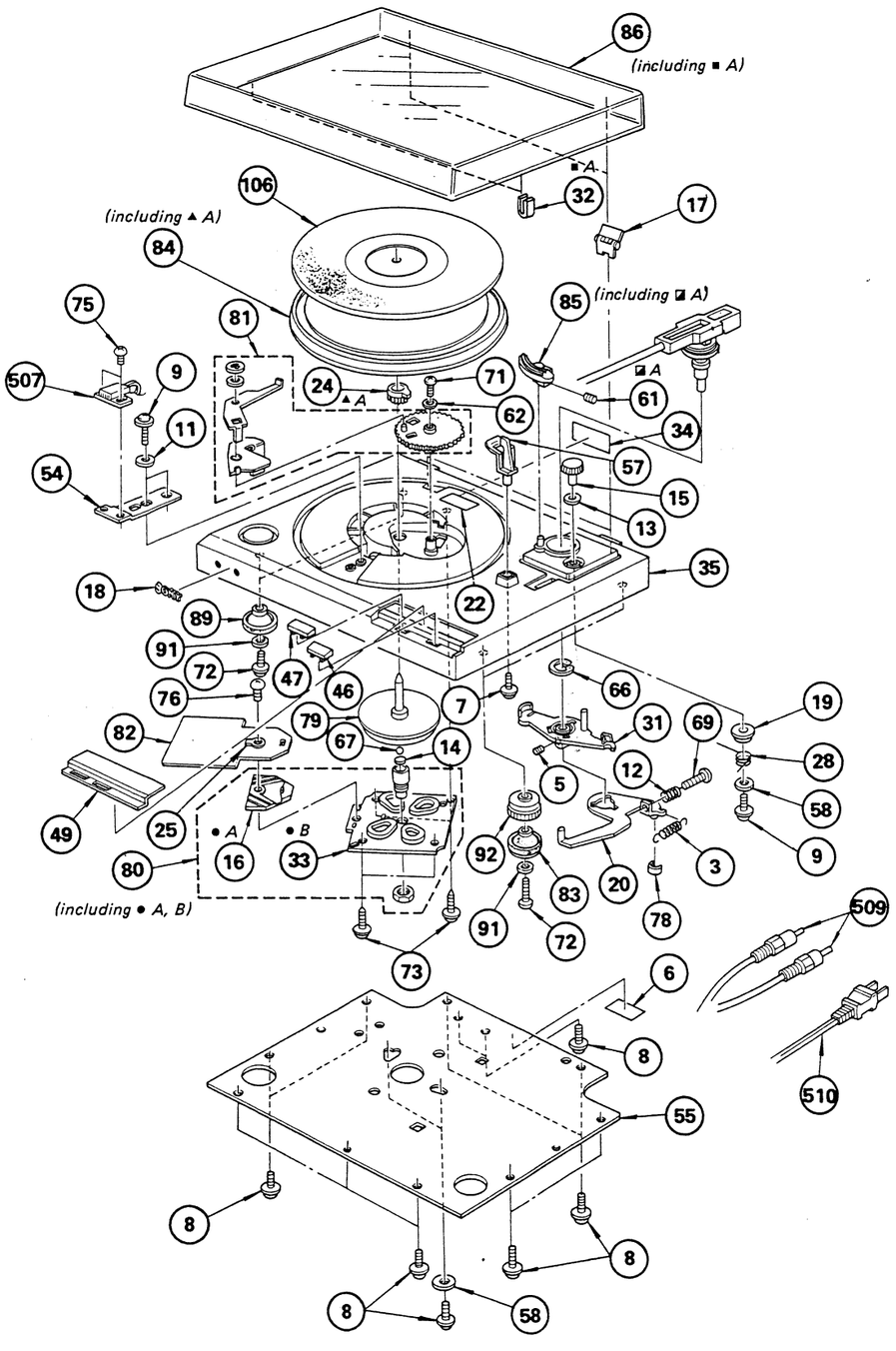
- ⊣⊢ and ⊣⊢: electrolytics

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

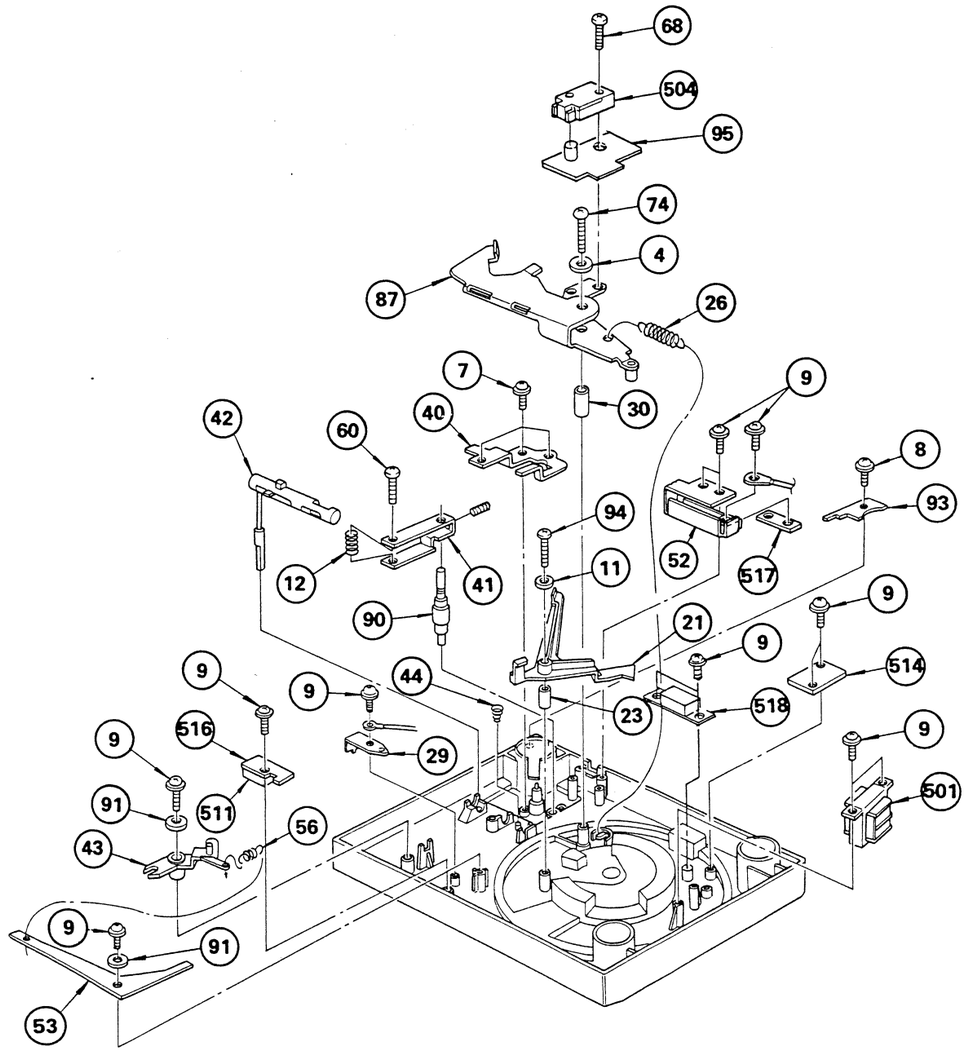
Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

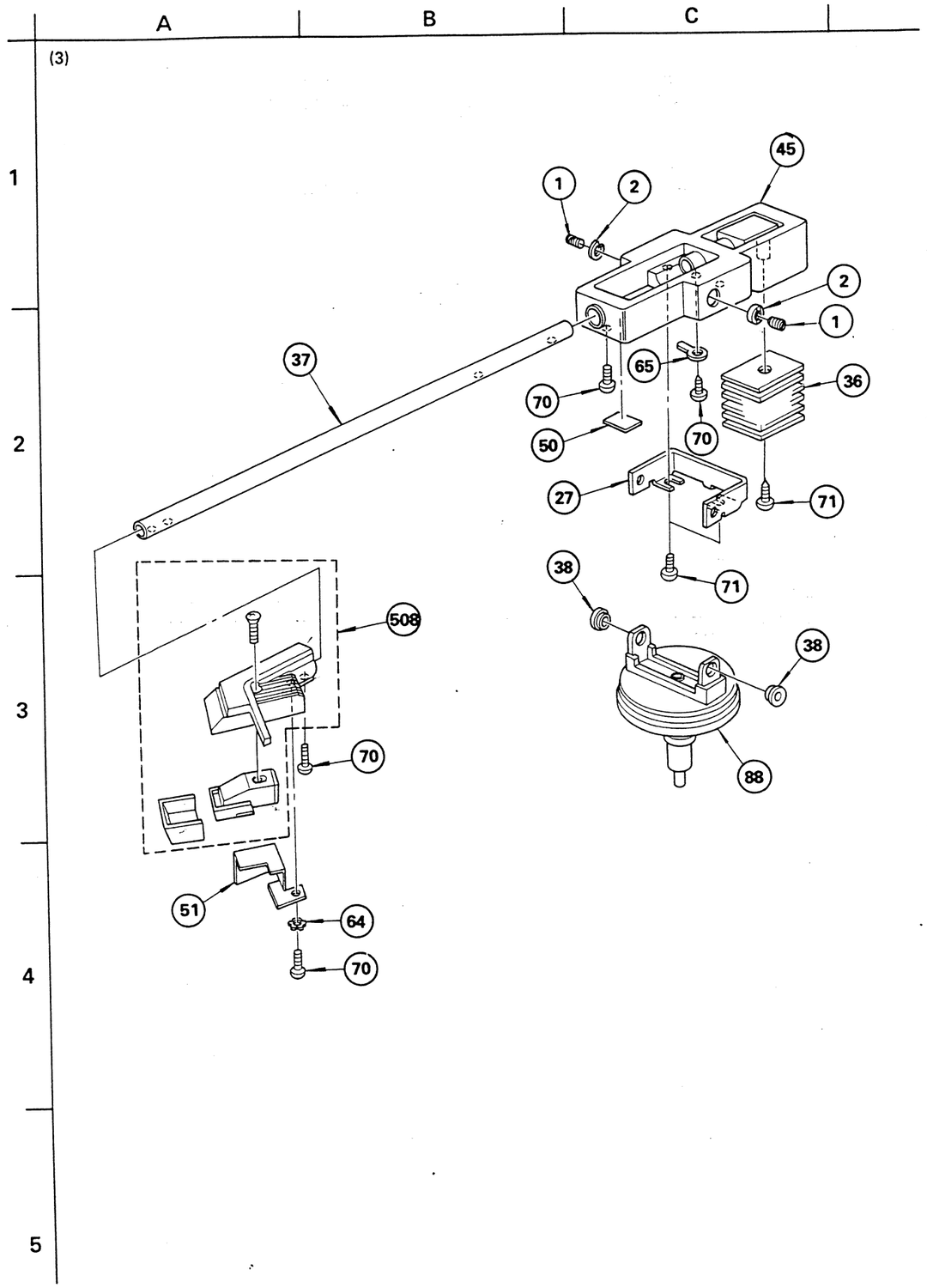
SECTION 5
EXPLODED VIEWS AND PARTS LIST

(1)



(2)





GENERAL SECTION

No.	Part No.	Description
1	2-203-518-61	SCREW, PIVOT
2	2-203-519-00	NUT
3	3-536-780-00	SPRING, TENSION
4	3-610-931-11	SPACER, SHAFT, DRUM, HEAD
5 ♦	3-701-508-00	SET SCREW, DOUBLE POINT 3X6
6	3-703-043-21	LABEL, CAUTION, MAIN
7	3-703-135-00	SCREW, PTPWH 3X8
8	3-703-136-00	SCREW, PTPWH 3X12
9	3-703-137-00	SCREW, PTPWH 3X10
10	4-301-647-00	WASHER, SPECIAL
11	4-812-554-00	WASHER
12	4-836-836-00	SPRING, COMPRESSION
13	4-844-041-00	WASHER, (N)
14	4-852-007-00	RETAINER (A), THRUST
15	4-852-037-11	KNOB, IFC
16	4-857-642-00	HOLDER, PC BOARD
17	4-857-653-11	HINGE, DUST COVER
18	4-857-661-11	EMBLEM, SONY
19	4-858-229-00	CAM, IFC
20 ♦	4-858-234-00	LEVER, RETURN
21 ♦	4-858-240-00	LEVER (M), CLUTCH
22	4-858-264-21	LABEL, CAUTION
23	4-861-933-00	SLEEVE (D)
24	4-868-052-00	GEAR, CENTER
25	4-870-539-00	PLATE, GROUND
26	4-870-785-00	SPRING, TENSION (MAIN LEVER)
27 ♦	4-874-209-00	REINFORCEMENT
28	4-874-250-00	SPRING
29 ♦	4-874-273-00	PLATE, GROUND, PANEL
30	4-875-207-00	SLEEVE
31 ♦	4-875-214-11	LEVER, SWITCH
32	4-876-304-00	CUSHION, DUST COVER
33 ♦	4-876-389-00	STATOR
34	4-877-801-00	(US)....LABEL, SPECIFICATION
34	4-877-802-00	(AEP)...LABEL, SPECIFICATION
34	4-877-804-00	(E).....LABEL, SPECIFICATION
35	4-877-809-01	FRAME
36	4-877-810-00	WEIGHT
37	4-877-812-00	PIPE, ARM
38	4-877-814-00	BEARING, PIVOT
39	4-877-816-00	SHAFT, PIVOT
40 ♦	4-877-821-00	PLATE, FIXED, LIFTER
41 ♦	4-877-822-00	GUIDE, LIFTER
42	4-877-824-00	CAM, LIFTER
43 ♦	4-877-826-00	LEVER, REJECT
44	4-877-829-00	SPRING, COMPRESSION
45	4-877-830-00	JOINT, PIPE

GENERAL SECTION

No.	Part No.	Description
46	4-877-831-00	KNOB, REJECT
47	4-877-832-00	KNOB, SPEED SELECTION
48	.....	
49	4-877-834-01	PANEL (A), CONTROL
50	9-911-838-XX	SHEET
51 ♦	4-877-838-00	PLATE, SHIELD
52 ♦	4-877-839-00	PLATE (B), SHIELD
53 ♦	4-877-840-00	LEVER, REJECT SUPPORT
54 ♦	4-877-841-00	BRACKET, HEAD
55 ♦	4-877-843-00	PLATE, BOTTOM
56	4-877-850-00	SPRING
57	4-877-851-00	REST, ARM
58	4-890-173-00	WASHER
59	7-621-258-25	SCREW +P 2.3X20
60	7-621-259-85	SCREW +P 2.6X14
61	7-621-736-09	SET-SCT, HEX. 2.6X5
62	7-623-105-16	W 2, MIDDLE
63	7-623-208-22	SW 3, TYPE 2
64	7-623-420-07	LW 2, TYPE B
65	7-623-505-01	LUG, 2
66	7-624-133-54	STOP RING 10, TYPE-CE
67	7-671-114-01	BALL 4, STEEL
68	7-682-150-01	(US).....SCREW +P 3X14
68	7-682-122-27	(AEP,E)...SCREW +P 3X15
69	7-682-553-09	SCREW +B 3X20
70	7-685-104-64	SCREW +P 2X6 TYPE4
71	7-685-105-21	SCREW +P 2X8 TYPE2 SLIT
72	7-685-651-21	SCREW +BVTP 3X20 TYPE1
73	7-685-661-71	SCREW +BVTP 4X12 TYPE2 SLIT
74	7-685-666-21	SCREW +BVTP 4X30 TYPE2 SLIT
75	7-685-870-09	SCREW +BVTT 3X5 (S)
76	7-685-872-01	SCREW +BVTT 3X8 (S)
77	.....	
78	9-911-815-01	CUSHION
79	A-4608-195-A	ROTOR ASSY
80	A-4608-196-A	STATOR ASSY
81	A-4609-010-A	GEAR ASSY, DRIVING
82 ♦	A-4619-174-A	MOUNTED PCB, AMPLIFIER, SERVO
83	X-4857-048-0	INSULATOR ASSY
84	X-4877-802-0	TURNTABLE ASSY
85	X-4877-803-0	PLATE ASSY, UP AND DOWN
86	X-4877-804-0	COVER ASSY, DUST
87 ♦	X-4877-805-2	LEVER ASSY, MAIN
88	X-4877-806-0	JOINT ASSY, CENTER
89	X-4877-807-0	INSULATOR ASSY
90	X-4877-808-1	ROD ASSY PUSH

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

GENERAL SECTION

No.	Part No.	Description
91	0-056-028-00	WASHER, 14
92	4-858-274-11	COVER, INSULATOR
93	♦;4-877-842-00	PLATE (A), BOTTOM
94	7-685-152-21	SCREW, TAPPING; P3X25
95	4-858-268-00	(AEP,E)....SHEET, INSULATOR

ACCESSORY & PACKING MATERIAL

Part No.	Description
⚠1-526-565-00	(E).....ADAPTOR, AC PLUG
3-701-630-00	BAG, POLYETHYLENE
3-701-806-00	ADAPTOR, 45RPM, (E)
3-783-645-11	(AEP,E)....MANUAL, INSTRUCTION
3-783-645-21	(US).....MANUAL, INSTRUCTION
3-783-645-51	(AEP).....MANUAL, INSTRUCTION
3-794-123-11	LABEL, CAUTION
4-874-262-00	GUIDE, RECORD
4-877-807-11	SHEET, TURNTABLE
4-876-352-00	SHEET, PLASTIC; PROTECTOR
4-877-845-00	CARTON
4-877-846-00	HOLDER, TURNTABLE
4-877-847-00	CUSHION, LEFT
4-877-848-00	CUSHION, RIGHT
4-877-849-00	PLATE, PROTECTOR

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since thev are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (□-□□□-□□□-XX or □-□□□□-□□□-X) may be different from those used in the set.

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
501	⚠.1-447-049-00	(US).....TRANSFORMER, POWER		
501	⚠.1-447-059-00	(AEP)....TRANSFORMER, POWER		
501	⚠.1-447-107-00	(E).....TRANSFORMER, POWER		
502	♦;1-508-799-00	BASE POST (U TYPE)		
503	♦;1-508-800-13	U TYPE BASE POST 3P		
504	⚠.1-516-657-00	(US).....SWITCH, MINIATURE (S1)		
504	⚠.1-516-889-00	(AEP,E)....SWITCH, MINIATURE (S1)		
505	♦;1-535-115-00	TERMINAL		
506	♦;1-535-118-00	TERMINAL		
507	1-543-167-00	HEAD (TURN DETECTION) (MGH)		
508	1-549-103-00	CARTRIDGE(WITH SHELL) VL-38GSA		
509	1-551-294-00	CORD		
510	⚠.1-551-628-00	(US)....CORD, POWER		
510	⚠.1-551-472-00	(E).....CORD, POWER		
510	⚠.1-534-817-XX	(AEP)...CORD, POWER; EULOPLUG		
511	1-553-802-00	SWITCH, SLIDE (S301)		
512	♦;1-555-828-00	LEAD (WITH TERMINAL); WHITE		
513	♦;1-555-829-00	LEAD (WITH TERMINAL); RED		
514	♦;1-604-651-00	PC BOARD, POWER		
515	♦;1-605-560-00	PC BOARD, SERVO		
516	♦;1-605-561-00	PC BOARD, SPEED CHANGE		
517	♦;1-605-562-00	PC BOARD, PHONO		
518	⚠.1-552-535-00	(E)...VOLTAGE SELECTOR (S2)		
C1	⚠.1-161-749-00	FILM	0.01MF	125V
C311	⚠.1-123-324-00	ELECT	1000MF	16V
C312	⚠.1-123-323-00	ELECT	470MF	16V
C313	1-130-307-00	FILM	0.027MF 5%	100V
D301	⚠.8-719-200-02	DIODE 10E-2		
D302	⚠.8-719-200-02	DIODE 10E-2		
D303	⚠.8-719-200-02	DIODE 10E-2		
D304	⚠.8-719-200-02	DIODE 10E-2		
H1	8-719-903-00	DIODE HL-300C		
H2	8-719-903-00	DIODE HL-300C		
IC301	8-759-602-65	IC CX-065B		
IC302	8-759-145-58	IC UPC4558C		
IC303	8-759-145-58	IC UPC4558C		
Q301	8-729-177-43	TRANSISTOR 2SD774		
Q302	8-729-103-43	TRANSISTOR 2SB734		
Q303	8-729-177-43	TRANSISTOR 2SD774		
Q304	8-729-103-43	TRANSISTOR 2SB734		
R319	⚠.1-213-127-00	CARBON	47 5%	1/2W
RV301	1-226-236-00	RES, ADJ, CARBON 10K		
RV302	1-226-235-00	RES, ADJ, CARBON 5K		
RV303	1-228-222-00	RES, ADJ, METAL GLAZE 50K		
RV304	1-226-235-00	RES, ADJ, CARBON 5K		
RV305	1-226-235-00	RES, ADJ, CARBON 5K		
RV306	1-226-239-00	RES, ADJ, CARBON 100K		
RV307	1-226-239-00	RES, ADJ, CARBON 100K		

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTROLYTIC CAPACITORS

→ : Use the high voltage rated one.

CAP. (μF)	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	–	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	–
3300	1-121-661-00	1-123-075-00	1-123-071-00	–	–	–

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	–	–	–	–
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	–	1-123-028-00
3.3	1-121-995-00	–	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	–	–
47	1-123-251-00	1-121-919-00	–	–
100	1-123-084-00	–	–	–

CERAMIC CAPACITORS

CAP. (pF)	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (pF)	50 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

→ : Use the high voltage rated one.

CAP. (μF)	25 VOLT. PART No.	50 VOLT. PART No.	CAP. (μF)	25 VOLT. PART No.	50 VOLT. PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

ELECTROLYTIC CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	–	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	–
3300	1-121-661-00	1-123-075-00	1-123-071-00	–	–	–

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	–	–	–	–
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	–	1-123-028-00
3.3	1-121-995-00	–	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	–	–
47	1-123-251-00	1-121-919-00	–	–
100	1-123-084-00	–	–	–

CERAMIC CAPACITORS

CAP. (pF)	RATING 50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

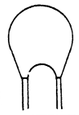
0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one. 25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

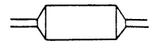
MYLAR CAPACITORS

CAP. (μF)	RATING 50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-654-00	–	–
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	–	–
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	–	–
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	–	–
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				



TANTALUM CAPACITORS

CAP. (μF)	RATING 3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01					→	→	1-131-396-00
0.015						→	1-131-397-00
0.022						→	1-131-398-00
0.033						→	1-131-399-00
0.047						→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	–	–	–	–	1-131-412-00	→	1-131-406-00
0.68	–	–	–	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	–	–	1-131-418-00	–	1-131-413-00	→	1-131-408-00
1.5	–	1-131-421-00	-	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	–	1-131-419-00	–	1-131-414-00	1-131-355-00	1-131-349-00
3.3	–	1-131-422-00	–	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	–	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	–	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	–
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	–			
68	1-131-394-00	1-131-388-00	–	–			
100	1-131-395-00	–	–	–			



TANTALUM CAPACITORS

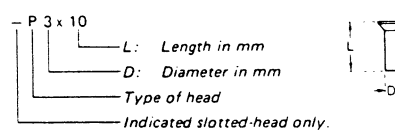
CAP. (μF)	RATING 3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22			–	–	1-131-262-00	1-131-278-00
0.33			–	–	1-131-263-00	1-131-279-00
0.47			1-131-169-00	–	1-131-264-00	1-131-280-00
0.68			–	1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00	–	1-131-266-00	1-131-282-00
1.5		1-131-250-00	–	–	1-131-267-00	1-131-283-00
2.2		–	–	1-131-259-00	1-131-268-00	1-131-284-00
3.3		–	1-131-255-00	–	1-131-269-00	–
4.7		1-131-251-00	1-131-171-00	–	1-131-270-00	–
6.8		–	–	1-131-260-00	1-131-271-00	–
10	–	–	1-131-256-00	–	1-131-272-00	–
15	–	1-131-252-00	–	1-131-261-00		
22	–	–	1-131-257-00	–		
33	1-131-176-00	1-131-253-00	1-131-173-00	–		
47	1-131-288-00	1-131-174-00	–	–		
100	1-131-177-00					

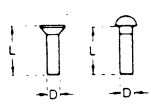
1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

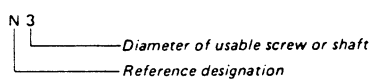
HARDWARE NOMENCLATURE

Screw:





Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazier-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

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